A New Species of *Gonolobus* (Apocynaceae, Asclepiadoideae) from Mesoamerica

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ABSTRACT. *Gonolobus taylorianus*, a Mesoamerican endemic, is described and illustrated.

Key words: Apocynaceae, Asclepiadoideae, *Gonolobus*, Mesoamerica.

The genus *Gonolobus* Michaux has about 150 species ranging from temperate North America to temperate South America. The greatest diversity is found in southern Mexico and northern Central America. The genus is most clearly distinguished from the other genera of the Gonolobinae by an extra anther appendage that is always found on the distal dorsal edge of the anther and is usually fleshy, of a contrasting color, and more or less patent. Additionally, the corona is always a simple, entire or 5-lobed, fleshy ring at the junction of the corolla and the gynostegium, there is frequently a well-developed corolline annulus, the corolla lobes are frequently strongly overlapping and twisted in bud, the indumentum is usually comprised of hairs of one length, and the follicles usually have five complete wings.

This new species came to light in the process of preparing floristic accounts for *Flora de Nicaragua* and *Flora Mesoamericana*, and is here described.

Gonolobus taylorianus W. D. Stevens & Montiel, sp. nov. TYPE: Nicaragua. Matagalpa: along road from Muy Muy to Esquipulas, ca. 19 km W of Esquipulas, 12°42′N, 85°45′W, elev. 400 m, 30 July 1978, *W. D. Stevens 9563* (holotype, MO). Figure 1.

Gonolobus taylorianus W. D. Stevens & Montiel; ex affinitate *G. nigri* et specierum affinium floribus majoribus et indumento annuli limbique eodem distinguendus.

Vine, twining (to right), woody below, corky bark absent; latex white, roots fibrous; young stems pubescent at nodes and in 2 lines on internodes, indumentum mixed, long hairs multicellular, pale yellow, reflexed, 0.15–0.4 mm long, short hairs multicellular, capitate-glandular, pale brown, erect, 0.05–0.1 mm long; internodes 2–16 cm long. Leaves opposite, without pseudostipules, blades ovate to elliptic, 5.9–12.5 × 2.2–7.1 cm, apex acuminate to attenuate, base lobate, lobes divergent to convergent, sinus 0.3–1.7 cm deep, glabrous or with scattered long (0.3–0.7 mm) and/or glandular hairs, lateral veins pinnate, 4 to 6 pairs, middle veins 35–45° to midrib, colleters 2 or 4; petiole 2.2–7 cm long, glabrous or with mixed indumentum on adaxial side. Inflorescence extra-axillary, 1 per node, congested-racemiform, 4- to 18-flowered, with indumentum of stem or rarely glabrous, sessile or peduncle 1–6(–13) mm long, axis 1–10 mm long, pedicel 4–11 mm long, bracts 0.6–2.6 × 0.1–0.5 mm, linear; calyx tube 0.5–1.2 mm long, with 1 to 2 colleters per sinus, lobes lanceolate to deltate, with acute tips, reflexed, 2.3–6.2 × 1.3–2 mm, green, glabrous or with a few long hairs on margin and base of abaxial side; corolla rotate, aestivation imbricate and dextrorse, brown, green, or purple, tube 1.7–2.7 mm long, glabrous or with mixed indumentum outside, long hairs to 0.1 mm long, inside densely pubescent with glassy, erect or curly, unicellular hairs 0.1–0.3 mm long, faucal annulus tubular, 5-lobed, 0.5–1.1 mm tall at lobes, 0.3–0.6 mm tall between lobes, outside with same indumentum as adjacent corolla tube, corolla lobes deltate to lanceolate with acute tips, with conspicuous to inconspicuous auricles at base, 6.6–11.7 × 3.2–4.7 mm, reflexed, glabrous or with mixed indumentum outside, inside glabrous to densely pubescent with glassy, erect or curly, unicellular hairs 0.1–0.3 mm long; gynostegium with stipe 0.3–0.6 × 0.7–1 mm, 5-ribbed, corona ± hidden by faucal annulus, a 5-lobed disk, adnate to corolla and gynostegium stipe, 0.3–0.6 mm thick, 0.6–1.2 mm wide between lobes, 0.9–1.5 mm wide at lobes, yellow, anther appendages deflexed to nearly patent, spathulate, 0.8–1.3 mm long, 0.9–1.3 mm wide at tip, fleshy, smooth to papillate, orange, terminal appendages tightly appressed to margin of style apex, 0.2–0.5 × 1.7–2.1 mm, green, guide rails straight, parallel, 0.6–1.2 × 0.1–0.3 mm; corpusculum 0.2–0.28 × 0.07–0.13 mm, sagittate, pale brown to black, translators 0.25–0.33 × 0.1–0.18 mm, broadly winged, pollinia 0.8–1.03 × 0.37–0.53 mm, obovate to pyriform, somewhat asymmetrical, exca-

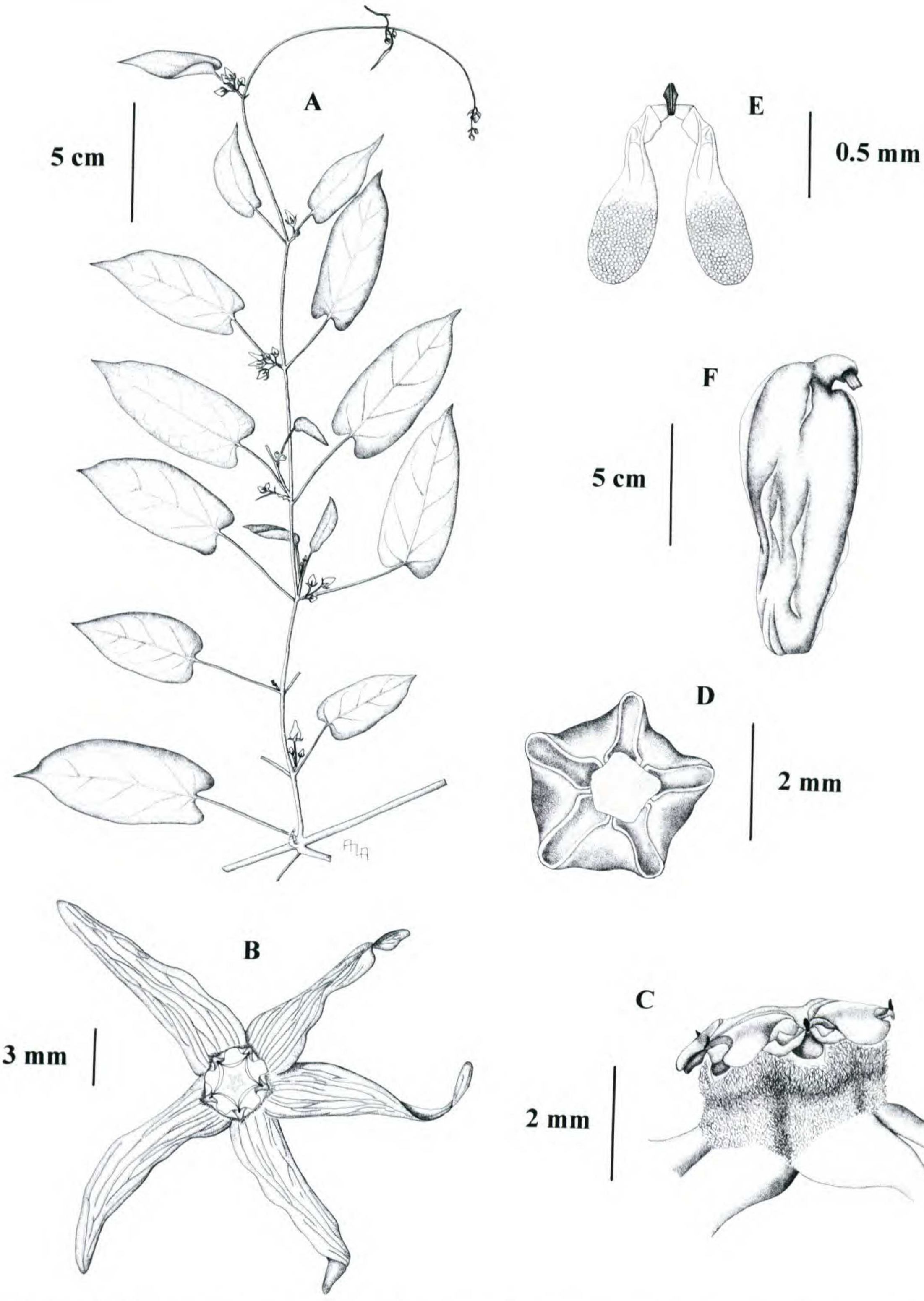

Figure 1. *Gonolobus taylorianus* W. D. Stevens & Montiel. —A. Flowering branch (*Saunders 872*). —B. Flower (*Stevens 9563*, type). —C. Flower, lateral view (*Stevens 9563*). —D. Corona, gynostegium removed (*Stevens 9563*). —E. Pollinarium (*Croat 42280*). —F. Follicle (*Moreno 15945*).

vated, sterile and translucid at attachment; style apex 2.4–3.4 mm wide, star-shaped, shallowly concave, smooth, red-brown. Follicles single, fusiform with narrow asymmetric base, 11–19 × 4.5–7 cm, glabrous, spongy, mottled white and pale green, smooth or irregularly winged (4 complete wings + 1 incomplete distal wing, 2 complete + 2 incomplete wings, or 1 to several incomplete wings), wings 2–8 mm wide; seeds obovate, 7–9.3 × 3.7–5.5 mm, flat, dark gray to gray-brown, verrucose-reticulate, margin 0.5–1 mm wide, irregularly crenulate on distal ¾–½, coma 2.5–5 cm long, white.

This species has most often been annotated as *Gonolobus salvinii* Hemsley, but also as *G. niger* (Cavanilles) R. Brown ex Schultes, *G. edulis* Hemsley, *G. fraternus* Schlechtendahl, *G. stenanthus* (Standley) Woodson, *G. roeanus* L. O. Williams, as well as a few generic misidentifications. One collection, *Standley 26259*, was even annotated as the type of a new species of *Gonolobus*, but the name was never published. The new species was described in the *Flora of Guatemala* (Standley & Williams, 1969) under the name *Gonolobus salvinii*, but examination of the type of that name reveals that it corresponds to a rare Guatemalan endemic, quite a different species that is described in that same publication under the name *G. longipetiolatus* Woodson. *Gonolobus longipetiolatus* will be considered a synonym of *G. salvinii*, while the more common and widespread species is here described. The new species *Gonolobus taylorianus* was treated as "*Gonolobus* sp. D" in *Flora de Nicaragua* (Stevens et al., 2001).

Gonolobus taylorianus is related to *G. niger*, but that species has long peduncles, much smaller flowers, purple-black corollas, a low faucal annulus that is, along with the rest of the corolla, completely glabrous, and larger follicles that are completely smooth or have only a few small fragments of wings, appearing to be prickles on the distal part of the follicle; *G. niger* ranges from northwestern Mexico to Guatemala. *Gonolobus roeanus* is also related and has brown corollas, but has smaller flowers and a low annulus that has only a terminal fringe of hairs, while the rest of the annulus and adaxial corolla surface is glabrous; *G. roeanus* seems to be known only from the flowering type collection from Guatemala. This small group of *Gonolobus*, which includes other undescribed species, is unusual in having a mixed indumentum and follicles that are not uniformly 5-winged. These characters suggest a relationship with *Matelea*, but the dorsal anther appendages are well developed and there is no doubt that the group is best accommodated within *Gonolobus*.

This new species is variable in a number of characters, especially corolla color (green, brown, or purple), flower size, although always much larger than the related species, distribution of the indumentum on the corolla (tending to be restricted to the annulus and limb on southern collections, but extending onto the lobes on the northern collections), the fruit wings (from smooth to various combinations of complete and incomplete wings), and in ecological requirements (moist, wet, or cloud forests between near sea level and 1300 m). *Gonolobus taylorianus* flowers mostly from July to September, and fruits mature from January to March. The unusual morphological variability is perhaps related to the fact that the species is often cultivated for its fruits. The developing fruits are eaten as a vegetable, raw when young, cooked when more mature, or boiled with sugar at any stage, and are available in markets in Guatemala and El Salvador during the fruiting season (Standley & Williams, 1969). "Cuchamper" is the most common local name for the species, and "Siguamper," "Chinchayote," and "Polla" are also recorded from herbarium labels. It seems to be primarily cultivated as a dooryard plant, but long cultivation and selection over a relatively broad geographic range could be accentuating the apparent variability of the species.

This species is named in honor of Jack Crawford Taylor (14 April 1922–), influential patron of the arts and sciences. It is most fitting that this new species, at once beautiful and useful, is named for a man whose dedication to preserving and understanding our environment is manifest.

Paratypes. GUATEMALA. **Jalapa:** along Hwy. 19 about 6.3 mi. SE of Jalapa, 16 July 1971, *Stevens 1247* (MO). **Guatemala:** camino a Humitos, Km 34 Amatitlán, 31 Aug. 1997, *MacVean & MacVean 7096* (MO, UVAL). **Santa Rosa:** Cerro Gordo, Sep. 1892, *Heyde & Lux ex Smith 4007* (MO). HONDURAS. **Colón:** base of Cerro Piedra Blanca, along Bonito Oriental–Limón road, ca. 5 km NE of Bonito Oriental, ca. 50 m SW of Río Piedra Blanca, 5 Feb. 1993, *Evans 1079* (MO); old road to Castilla, E of airport to Jericho, 12 Jan. 1981, *Saunders 872* (MO, NY). **Francisco Morazán:** Villa San Roque, 1 Aug. 1950, *Standley 26259* (MO); Sabana Grande, 9 Sep. 1945, *Valerio 3285* (MO); Quebrada La Orejona, NE de la UNAH, 17 Aug. 1978, *Zelaya 84* (MO). **Olancho:** márgenes del Río Talgua, 6 km SE de Catacamas, 16 Mar. 1987, *Ortega 203* (MO). EL SALVADOR. **La Libertad:** San Salvador, Jardín Botánico La Laguna, 3 Sep. 1984, *Berendsohn & Berendsohn 197* (MO); San Salvador, Jardín Botánico La Laguna, 20 Sep. 1988, *Villacorta 181* (MO); San Salvador, Jardín Botánico La Laguna, 25 July 1989, *Villacorta 343* (LAGU, MO); Mun. Antiguo Cuscutlán, laderas de La Laguna, casa W de vigilante, 28 Sep. 1989, *Villacorta et al. 458* (B, LAGU, MO). **La Paz:** Hacienda

Santa María, Canton La Lucha, Tecoluca, 13 Oct. 1988, *Berendsohn & R. Calderón 1187* (MO). **Santa Ana:** Santa Ana, 1928, *S. Calderón 2409* (MO); Santa Ana, 7 mi. NE of Metapán on road to Cerro Monte Cristo, 30 July 1977, *Croat 42280* (MO). **San Salvador:** San Bartolo, Ilopango, 12 Aug. 1973, *Flores 520* (MO). **Sonsonate:** Cantón La Calera, nacimiento del Río Grande de Sonsonate, 21 July 1989, *Villacorta et al. 324* (LAGU, MO). NICARAGUA. **Boaco:** summit and upper NW slope of Cerro Mombachito, 18 Jan. 1981, *Stevens 18969* (MO). **Chontales:** 2.8 km N of Cuapa, 21 Jan. 1978, *Stevens 6149* (MO). **Estelí:** Salto de Estanzuela, 13 Aug. 1976, *Hall 7687* (MO); 1 km al S de Santa Cruz, camino a Cuajiniquil, 6 Mar. 1982, *Moreno 15712* (MO); Hacienda Varela, 17 km de Estelí camino a El Sauce, 17 Sep. 1982, *Moreno 17411* (MO). **Granada:** NE del Volcán Mombacho, empalme de los caminos a Santa Isabel y a Cutirre, 16 Sep. 1980, *Moreno 2642* (MO); NE del Volcán Mombacho, Hacienda Las Delicias, 8–9 km sobre la carretera a Cutirre, 16 Sep. 1980, *Moreno 2693* (MO); Volcán Mombacho, empalme de los caminos a Las Delicias y a La Calera, 16 Sep. 1980, *Moreno 2700* (MO); Volcán Mombacho, La Esmeralda, 19 Mar. 1982, *Moreno 15945* (MO). **Madriz:** Cerro Volcán Somoto (Tepesomoto), lado Oeste, Finca San Martín, 25 Sep. 1980, *Moreno 2963* (MO). **Matagalpa:** Quebrada Malacal, Hacienda La Bonanza, 20 km de Matagalpa, 21 Jan. 1982, *Castro 2403A* (MO); along Hwy. 5, 24.6 km from Hwy. 3 intersection, 8.6 km SW of Río Tuma bridge, 26 Jan. 1982, *Stevens & Montiel 21438* (MO). **Rivas:** Isla Ometepe, Volcán Concepción, Los Hatillos, camino a Las Delicias, 9 Aug. 1984, *Robleto 990* (MO). **Zelaya:** between Cerro Saslaya and San José del Hormiguero, 13 Mar. 1978, *Stevens 7068* (MO); vicinity of Wani, Río Uli, 15 Mar. 1978, *Stevens 7271* (MO). COSTA RICA. **Guanacaste:** Santa Rosa National Park, 6 Jan. 1980, *Janzen 11873* (MO). **Puntarenas:** Curú, 2 Sep. 1995, *Sanders et al. 17751* (MO, UCR).

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